

IN THE CLAIMS:

Please amend the claims as follows:

1. (currently amended) A method comprising: for determining a transmission power factor being operable with an i-th re-transmission during an uplink data transmission between a mobile terminal device (UE) and a base station (BS) via a code division multiple access (CDMA) system employing an automatic repeat request (ARQ), said uplink data transmission being operated in a sequence of first transmissions and i-th re-transmissions,
 - receiving a pre-defined number (~~M~~) of status information items, said status information items each containing at least one of an acknowledgement (~~ACK~~) item and a non-acknowledgement (~~NACK~~) item in accordance with said an automatic repeat request (~~ARQ~~) associated with an i-th re-transmission during an uplink data transmission between a mobile terminal device and a base station via a code division multiple access system employing said automatic repeat request, said uplink data transmission being operated in a sequence of first transmissions and i-th re-transmissions;
 - determining a first error quantity (~~N_i~~) and a second error quantity (~~K_i~~) from said pre-defined number (~~M~~) of status information items, said first error quantity (~~N_i~~) being equal to a number of i-th re-transmissions, said second error quantity (~~K_i~~) being equal to a number of i-th re-transmissions being responded by status information items each containing said non-acknowledgement (~~NACK~~) item; and
 - determining an error ratio from said first error quantity (~~N_i~~) and said second error quantity (~~K_i~~); and
 - determining a transmission power factor (~~P_{i cmd, new}~~) from a current valid transmission power factor (~~P_{i cmd}~~) and a transmission power correction factor (~~ΔP_{i cmd}~~) such that a difference between said error ratio and a pre-defined target error ratio (~~FER~~) is minimized,

wherein said determining of the transmission power factor further comprises :

- determining a deviation value of said error ratio from said pre-defined target error ratio;

in case said first error quantity is unequal to zero or said deviation value exceeds a pre-defined deviation level :

- determining said transmission power correction factor depending on at least a transmission power correction step value, said first error quantity, said second error quantity and said pre-defined target error ratio; and

- determining said transmission power factor;

otherwise:

maintaining a current valid transmission power factor being operable with said i-th re-transmission, and

further wherein said transmission power correction factor is a product of a first factor, a second factor and a third factor, wherein

- a value of said first factor is equal to a value out of -1 and +1;
- said second factor is defined mathematically as following:

$$\left(\frac{C_{Ni}^{Ki} \cdot FER^{Ki} (1 - FER)^{Ni - Ki}}{FER} \right)^{-1}$$

where C_{Ni}^{Ki} is a binomial coefficient, FER is said pre-defined target error ratio,

Ni is said first error quantity and Ki is said second error quantity; and

said third factor is said transmission power correction step value.

2. (canceled)

3. (currently amended) The method according to claim 21, wherein said transmission power correction factor (ΔP_{i_cmd}) increases said transmission power factor (P_{i_cmd}) in case said error ratio is higher than said pre-defined target error

ratio (~~FER~~) and said transmission power correction factor (~~ΔP_{i_cmd}~~) decreases said transmission power factor (~~P_{i_cmd}~~) in case said error ratio is lower than said pre-defined target error ratio (~~FER~~).

4. (currently amended) The method according to claim 1, wherein said error ratio (~~K_i/N_i~~) is a ratio of said second error quantity (~~K_i~~) and said first error quantity (~~N_i~~).

4.5. (currently amended) The method according to claim 21, wherein said deviation value is an absolute deviation value of a difference between said error ratio (~~K_i/N_i~~) and said pre-defined target error ratio (~~FER~~) and said pre-defined deviation level is a pre-defined system parameter (~~ϵ~~).

6. (currently amended) The method according to claim 21, wherein said pre-defined deviation level depends (~~ϵ~~) on said pre-defined target error ratio (~~$\epsilon = \epsilon[FER]$~~).

7. (currently amended) The method according to claim 21, said transmission power factor (~~P_{i_cmd}~~) being a transmission power reduction factor, said transmission power factor (~~P_{i_cmd}~~) being defined in relationship to a transmission power being operable with first transmissions, wherein said transmission power is an original transmission power being not adjusted due to one ~~θ~~ or more further supplementary power control mechanisms.

8. (currently amended) The method according to claim 1, wherein said pre-defined target error ratio is a target frame error ratio (~~target FER~~).

9. (canceled)

10. (currently amended) The method according to claim 1, wherein said code division multiple access (~~CDMA~~) system is a wideband code division multiple

access ~~(WCDMA)~~-system, said automatic repeat request ~~(ARQ)~~ is a fast hybrid automatic repeat request ~~(fast H-ARQ)~~, at least one dedicated physical data channel ~~(DPDCH)~~ and a dedicated physical control channel ~~(DPCCH)~~ are used for uplink data transmission ~~WCDMA~~ and said transmission power factor ~~($P_{i_{cmd}}$)~~ is applied selectively on said at least one dedicated physical data channel ~~(DPDCH)~~.

11.(previously presented) A software tool for determining a transmission power factor, comprising program portions for carrying out the operations of claim 1, when said program portions are implemented in a computer program stored on a readable medium for being executed on a processing device, a terminal device, a communication terminal device or a network device.

12.(previously presented) A computer program product for determining a transmission power factor, comprising loadable program code sections for carrying out the operations of claim 1, when said program code sections are executed on a processing device, a terminal device, a communication terminal device or a network device.

13.(previously presented) A computer program product for determining a transmission power factor, wherein said computer program product is comprising program code sections stored on a computer readable medium for carrying out the method of claim 1, when said computer program product is executed on a processing device, a terminal device, a communication terminal device or a network device.

14.(currently amended) A mobile terminal device for determining a transmission power factor being operable with an i-th re-transmission during an uplink data transmission to a base station ~~(BS)~~, comprising:

- a communication interface,

said communication interface transmitting a sequence of individual data packets, said transmitting being operated via a code division multiple access (CDMA)-system and using an automatic repeat request (ARQ),

said communication interface receiving a pre-defined number (M)-of status information items each containing at least one of an acknowledgement (ACK) item and a non-acknowledgement (NACK)-item in accordance with said automatic repeat request (ARQ);

- a component for determining a first error quantity (N_i)-and a second error quantity (K_i)-from said pre-defined number (M)-of status information items, said first error quantity (N_i)-being equal to a number of i-th re-transmissions, said second error quantity (K_i)-being equal to a number of i-th re-transmissions being responded by status information items each containing said non-acknowledgement (NACK)-item;
- a component for determining an error ratio from said first error quantity (N_i) and said second error quantity (K_i); and
- a component for determining a transmission power factor ($P_{i_{cmd,new}}$)-from a current valid transmission power factor ($P_{i_{cmd}}$)-and a transmission power correction factor ($\Delta P_{i_{cmd}}$)-in order to minimize a difference between said error ratio and a pre-defined target error ratio (FER),

wherein said component for determining a transmission power factor is further configured:

- to determine a deviation value of said error ratio from said pre-defined target error ratio;
in case said first error quantity is unequal to zero or said deviation value exceeds a pre-defined deviation level:
- to determine said transmission power correction factor depending on at least a transmission power correction step value, said first error quantity, said second error quantity and said pre-defined target error ratio; and
- to determine said transmission power factor;
otherwise:

to maintain a current valid transmission power factor being operable with said i-th re-transmission, and

further wherein said transmission power correction factor is a product of a first factor, a second factor and a third factor, wherein

- a value of said first factor is equal to a value out of -1 and +1;
- said second factor is defined mathematically as following:

$$\left(\frac{C_{N_i}^{K_i} \cdot FER^{K_i} (1 - FER)^{N_i - K_i}}{FER} \right)^{-1}$$

where $C_{N_i}^{K_i}$ is a binomial coefficient, FER is said pre-defined target error ratio,

N_i is said first error quantity and K_i is said second error quantity; and

said third factor is said transmission power correction step value.

15.(currently amended) A system allowing for determining a transmission power factor being operable with an i-th re-transmission during an uplink data transmission from a mobile terminal device (~~UE~~) to a base station (~~BS~~), said mobile terminal device comprising:

- a communication interface,
said communication interface transmitting a sequence of individual data packets, said transmitting being operated via a code division multiple access (~~CDMA~~) system and using an automatic repeat request (~~ARQ~~),
said communication interface receiving a pre-defined number (~~M~~) of status information items each containing at least one of an acknowledgement (~~ACK~~) item and a non-acknowledgement (~~NACK~~) item in accordance with said automatic repeat request (~~ARQ~~);
- a component for determining a first error quantity (~~N_i~~) and a second error quantity (~~K_i~~) from said pre-defined number (~~M~~) of status information items, said first error quantity (~~N_i~~) being equal to a number of i-th re-transmissions,

said second error quantity (~~K_i~~)—being equal to a number of i-th re-transmissions being responded by status information items each containing said non-acknowledgement (~~NACK~~) item;

- a component for determining an error ratio from said first error quantity (~~N_i~~) and said second error quantity (~~K_i~~); and
- a component for determining a transmission power factor (~~P_{i cmd, new}~~) from a current valid transmission power factor (~~P_{i cmd}~~) and a transmission power correction factor (~~ΔP_{i cmd}~~) in order to minimize a difference between said error ratio and a pre-defined target error ratio (~~FER~~)

wherein said component for determining a transmission power factor is further configured:

- to determine a deviation value of said error ratio from said pre-defined target error ratio;
in case said first error quantity is unequal to zero or said deviation value exceeds a pre-defined deviation level;
- to determine said transmission power correction factor depending on at least a transmission power correction step value, said first error quantity, said second error quantity and said pre-defined target error ratio; and
- to determine said transmission power factor;

otherwise:

to maintain a current valid transmission power factor being operable with said i-th re-transmission, and

further wherein said transmission power correction factor is a product of a first factor, a second factor and a third factor, wherein

- a value of said first factor is equal to a value out of -1 and +1;
- said second factor is defined mathematically as following:

$$\left(\frac{C_{N_i}^{K_i} \cdot FER^{K_i} (1 - FER)^{N_i - K_i}}{FER} \right)^{-1}$$

where $C_{N_i}^{K_i}$ is a binomial coefficient, FER is said pre-defined target error ratio,

N_i is said first error quantity and K_i is said second error quantity; and

said third factor is said transmission power correction step value;

said base station comprising:

- a communication interface,
said communication interface receiving said sequence of individual data packets from said mobile terminal device; and
said communication interface transmitting said status information items to said mobile terminal device, said status information items being based on said automatic repeat request (ARQ).